

The listing of claims will replace all prior versions, and listings, of claims in the application.

**In the Claims:**

1. (Original) A biosensor comprising:
  - (i) a substrate comprising platinum or a platinum alloy;
  - (ii) a first layer formed on the substrate, the first layer comprising a sugar-derivative of a pyrrole; and
  - (iii) a second layer formed on the first layer, the second layer comprising an amphiphilic pyrrole and, within the second layer, one or more enzymes.
2. (Original) A biosensor according to claim 1, wherein the sugar-derivative of a pyrrole is a lactobionamide pyrrole.
3. (Currently Amended) A biosensor according to claim 1 ~~or claim 2~~, wherein the amphiphilic pyrrole comprises a tertiary amine group.
4. (Currently Amended) A biosensor according to ~~any~~ claim 1, wherein the substrate is platinum or a platinum-iridium alloy.
5. (Currently Amended) A biosensor according to ~~any preceding~~ claim 1 comprising two or more different enzymes within the second layer.
6. (Original) A biosensor according to claim 5, wherein each enzyme is deposited as a separate layer within the second layer, so that the second layer comprises two or more sub-layers of different enzymes.

7. (Original) A biosensor according to claim 6, comprising at least two layers of each enzyme.

8. (Currently Amended) A biosensor according to ~~any preceding~~ claim 1 comprising an oxidoreductase enzyme within the second layer.

9. (Original) A biosensor according to claim 8, wherein the oxidoreductase is xanthine oxidase.

10. (Original) A biosensor according to claim 9, additionally comprising nucleoside phosphorylase.

11. (Original) A biosensor according to claim 10, additionally comprising adenosine deaminase.

12. (Original) A biosensor according to claim 11, comprising a ratio adenosine deaminase : nucleoside phosphorylase : xanthine oxidase of approximately 1:1:5.

13. (Original) A biosensor according to claim 11, wherein the enzymes are deposited as separate sub-layers within the second layer, with xanthine oxidase deposited further away from the substrate than the nucleoside phosphorylase.

14. (Original) A biosensor according to claim 13, additionally comprising a layer of adenosine deaminase deposited closer to the substrate than the nucleoside phosphorylase.

15. (Currently Amended) A biosensor according to claim 13 ~~or claim 14~~, comprising several layers of nucleoside phosphorylase and xanthine oxidase, and optionally adenosine deaminase.

16. (Currently Amended) A biosensor according to ~~any preceding~~ claim 1 additionally comprising a reference electrode.

17. (Currently Amended) A kit for detecting the presence and/or concentration of a substance comprising a biosensor according to ~~any preceding~~ claim 1.

18. (Currently Amended) A method of producing a biosensor according to ~~any one of claims 1-16~~ claim 1, comprising the steps of:

- (i) providing a substrate comprising platinum or a platinum alloy;
- (ii) depositing a first layer comprising a sugar-derivative of a pyrrole; and
- (iii) depositing a second layer, the second layer comprising an amphiphilic pyrrole and, within the second layer, one or more enzymes.

19. (Currently Amended) A method according to claim ~~19~~ 18, wherein the second layer comprises two or more different enzymes, each enzyme being deposited in a solution comprising acetonitrile as one or more separate sub-layers to form the second layer.

20. (Currently Amended) A method according to ~~claims~~ claim 18 ~~or 19~~, wherein the first layer comprises a lactobionic pyrrole and is deposited in a solution comprising acetonitrile.

Cancel claims 21-26.

27. (New) A method of detecting the presence and/or concentration of xanthine comprising use of the biosensor of claim 9.

28. (New) A method according to claim 19, wherein the first layer comprises a lactobionic pyrrole and is deposited in a solution comprising acetonitrile.

29. (New) A method of detecting xanthine or inosine comprising use of the biosensor of claim 11.

30. (New) A method of detecting xanthine or inosine comprising use of the biosensor of claim 13.

31. (New) A method of detecting one or more purines comprising use of the biosensor of claim 12.

32. (New) A method of detecting one or more purines comprising use of the biosensor of claim 14.

33. (New) A method of detecting the amount of a substance within a tissue, comprising exposing a biosensor according to claim 1 to a sample of tissue or body fluid *in vivo* or *in vitro*, and detecting an electrical current produced by the biosensor.

34. (New) A method according to claim 33, wherein the tissue or body fluid is blood, brain, muscle, cardiac tissue, saliva or urine.

35. (New) A method according to claim 1, wherein the substance is adenosine.

36. (New) A biosensor according to claim 14 comprising several layers of nucleoside phosphorylase and xanthien oxidase, and optionally adenosine deaminase.